

The CHEMIST

MARCH, 1943



VOL. XX, No. 3



WALTER S. LANDIS

You helped us win it!



Naturally we at Corning are proud to be included among the industries who have been awarded the Army-Navy "E".

It is an honor we prize. And it will spur all of us on to still greater efforts.

In accepting this award we are glad to acknowledge the part so many of our friends in the scientific world, our customers and our laboratory supply dealers, have had in aiding us in its winning. In fact, Corning Research in Glass, which began long before World War I, has been a mutual affair.

Pyrex Laboratory Ware, important though it is, is but one of the many achievements of Corning Research which so vitally affect both the war-time and peace-time efforts of every American.

In expressing our appreciation to the Army and to the Navy for their highest civilian award, we are also expressing our sincere appreciation to you of the laboratory world who helped us win it.

Laboratory and Pharmaceutical Division

CORNING GLASS WORKS • CORNING, N. Y.



The CHEMIST

Publication of

THE AMERICAN INSTITUTE OF CHEMISTS, INC.

V. F. KIMBALL, *Editor*, 233 Broadway, New York City

VOLUME XX

MARCH, 1943

NUMBER 3

Editor

V. F. Kimball, 233 Broadway, New York, New York.

Editorial Advisory Board

Walter J. Murphy, *Chairman*

Hilton Ira Jones

Howard S. Neiman

Contributing Editors

A. M. Buswell, State Water Survey Division, Urbana, Illinois.

R. K. Carleton, Rhode Island State College, Kingston, Rhode Island.

Leo M. Christensen, Chemurgy Project, The University of Nebraska,
Lincoln, Nebraska.

T. K. Cleveland, Philadelphia Quartz Company, Berkeley, California.

George H. Coleman, The State University of Iowa, Iowa City, Iowa.

Ralph T. K. Cornwell, Sylvania Industrial Corporation, Fredericksburg,
Virginia.

J. B. Ficklen, 727 South Oakland Avenue, Pasadena, California.

Minnie A. Graham, Queens College, Charlotte, North Carolina.

J. H. Jensen, Northern State Teachers College, Aberdeen, South Dakota.

Louise Kelley, Goucher College, Baltimore, Maryland.

Stewart J. Lloyd, University of Alabama, University, Alabama.

Lena Martin, Georgia State College, Milledgeville, Georgia.

Simon Mendelsohn, 608 E. Epworth, Winton Place, Cincinnati, Ohio.

Willard L. Morgan, Arnold, Hoffman and Company, Inc., Providence, Rhode
Island.

THE AMERICAN INSTITUTE OF CHEMISTS

HOWARD S. NEIMAN, *Secretary*

233 Broadway

New York, N. Y.

Entered as second class matter April 8, 1936, at the Post Office at New York, N. Y.,
under Act of August 24, 1912.

Issued monthly except in June, July and August at 233 Broadway, New York, N. Y.

Subscription price, \$2.00 a year. Single copy, this issue \$0.25

Copyright, 1943, by The American Institute of Chemists, Inc.

CONTRIBUTING EDITORS (Continued)

- William B. O'Brien, The Dodge Chemical Company, 656 Beacon Street.
Boston, Massachusetts.
- Harry S. Owens, Western Regional Research Laboratory, Albany, California.
- Ivy M. Parker, 4741 Pease Ave., Houston, Texas.
- W. B. Parks, 105 West Potlitzer, Pittsburg, Kansas.
- J. M. Purdy, The Lowe Brothers Company, Dayton, Ohio.
- Ashley Robey, P. O. Box 96, State College, Arkansas.
- Milton O. Schur, Brown Company, Berlin, New Hampshire.
- Kenneth E. Shull, 23 Bala Avenue, Bala Cynwyd, Pennsylvania.
- Margaret C. Swisher, University of Buffalo, Buffalo, New York.

IN THIS ISSUE

	Page
Tentative Program of Annual Meeting	183
Watch Legislation	185
Medal Award to Dr. Walter S. Landis	186
Senate Bill S.607	188
Senate Bill S.702	196
Council	209
Chapters	212
Books	215
Chemists	217

Twenty-First Annual Meeting
of
THE AMERICAN INSTITUTE OF CHEMISTS
at
The Edgewater Beach Hotel, Chicago, Illinois
May 15, 1943
TENTATIVE PROGRAM

- 9:00 a. m. Registration.
10:00 Annual Business Meeting. Election of Officers.
12:00 noon Luncheon Meeting of the National Council.
2:00 p. m. Speakers:
 Dr. Bruce K. Brown, Assistant Deputy Petroleum
 Coordinator, "Petroleum in the War".
 Dr. Robert J. Moore, Manager Development Labora-
 tories, Bakelite Corporation, "Synthetic Resin
 Plastics".
 Dr. H. E. Robinson, Research Laboratories of Swift
 and Company, "Meats in the War".
 Dr. David Klein, General Manager, the Wilson Labora-
 tories. "Vitamins in the War".
7:00 p. m. Banquet:

Presentation of the Medal of
THE AMERICAN INSTITUTE OF CHEMISTS
to
WALTER SAVAGE LANDIS

Vice president of American Cyanamid Company

Speakers

- Dr. Maximilian Toch, "Walter Savage Landis, the Man".
Mr. Harry L. Derby, President of American Cyanamid Corporation,
 "The Achievements of Dr. Landis".
Dr. Gustav Egloff, Presentation of the Medal.
Dr. Walter Savage Landis, Acceptance Address.



Acid Molybdic, C.P. Standard 85% POWDER

Analysis of Lot No. 121542

Assay (MoO ₃)	85.0%
Insoluble in NH ₄ OH	0.001%
Chloride (Cl)	0.0005%
Phosphate (P)	0.01%
Heavy Metals (as Pb)	0.001%
Residue (NH ₃)	10-12%

Made in U.S.A. J.T. Baker Chemical Co., Phillipsburg, N. J.

Baker's Analyzed
THE HIGHEST TYPE OF
Chemical Reagents

TODAY, laboratory control of quality is vital. With the nation's laboratories short-handed, Baker's Analyzed C. P. Chemicals with the actual analysis on the label have again proved the chemist's best friend.

Never before has the time-saving feature of the actual analysis on the label meant so much to chemists—especially those in industries serving our armed forces.

Be sure to specify Baker's Analyzed on your next order to laboratory supply houses. It will help you in making speedy, accurate calculations.

J. T. BAKER CHEMICAL CO., Phillipsburg, N. J.

NEW YORK
420 Lexington Avenue

PHILADELPHIA
220 South 16th Street

CHICAGO
433 North Michigan Avenue



BAKER'S ANALYZED C. P. CHEMICALS ARE SOLD BY THESE REPRESENTATIVE LABORATORY SUPPLY HOUSES

Watch Legislation

SENATOR Kilgore's bill S-607 calls for an "Office of War Mobilization" with a starting fund of \$400,000,000, organized under four main branches:

1. Office of Production and Supply.
2. Office of Manpower Supply.
3. Office of Scientific and Technical Mobilization.
4. Office of Economic Stabilization.

to supersede all other governmental, scientific, technological, industrial, and private organizations now functioning.

Senator Kilgore's bill S-702 calls for an "Office of Scientific and Technical Mobilization and for Other Purposes" with a starting fund of \$200,000,000.

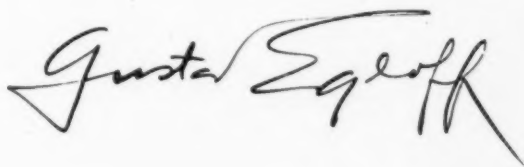
"Scientific and Technical personnel shall include all persons, excepting physicians and dentists, who have completed any course of study in any college or university in any branch of science or its practical application or who have not less than an aggregate of six months' training or employment in any scientific or technical vocation".

The provisions of the bill establish this office on a permanent basis for war and the peace to come.

It is urged that you study these bills thoroughly and write to your Senators and Congressmen.

For, should they pass, we in this country will be outregimenting the Axis powers.

Do not be lulled into a sense of security by believing that these bills cannot become law. This same sense of security was felt in the case of the Prohibition bill in World War I. It passed.



Medal Award to Dr. Walter S. Landis

THE medal of THE AMERICAN INSTITUTE OF CHEMISTS, presented annually for outstanding service to the science of chemistry and the profession of chemist in America, has been awarded this year to Dr. Walter Savage Landis, vice president of the American Cyanamid Company, New York, N. Y.

The award is made in recognition not only of Dr. Landis' outstanding contributions to engineering and development work largely in the field of nitrogen derivatives, but also for his services to the professional side of chemistry as an able executive, and for his contributions of time and effort toward raising the professional standard of chemists.

Dr. Landis is a graduate of Lehigh University with the degrees of metallurgical engineer (1902), M.S. (1906), and the honorary degree of doctor of science (1922). He taught in the Department of Mineralogy and Metallurgy of Lehigh until 1912, when he resigned as associate professor. During 1905 and 1906 he studied crystallography and mineralogy at Heidelberg, Germany, and in 1909 spent some time at the Krupp Institute in the Technical High School at Aachen, Germany. In 1912, he became associated with the American Cyanamid Company as chief technologist. He has been with this company for the past thirty-one years, having been made director in 1922 and vice president in 1923.

Dr. Landis' activities were concerned with the engineering and development of processes and plants for the production of derivatives of cyanamid. These included the first American plant for the production of ammonia from cyanamid during World War I, and the oxidation of ammonia to nitric acid. He developed processes for the production of cyanides and ferrocyanides, dicyandiamid and urea, and hydrocyanic acid, and he instituted the first research laboratory of American Cyanamid Company in 1913. During the first World War, he was consultant to many industrial groups faced with the problems of producing munitions for which they were not experienced.

He designed the first portable hydrogen generator used largely in the first World War by the American forces.

Dr. Landis was one time chairman of the New York Section of the American Chemical Society; one time chairman of the New York Section of the Electrochemical Society and president of the national Electrochemical Society; a member of the American Institute of Chemical Engineers, of the American Institute of Mining and Metallurgical Engineers, and of THE AMERICAN INSTITUTE OF CHEMISTS. He served as a member of Chemist Advisory Council, Inc., to which he contributed valuable services. He belongs to Tau Beta Pi, Sigma Xi, and Epsilon Chi, honorary scientific societies, and has received the Chemical Industry Medal and the Perkins Medal. He is president of The Chemists' Club, New York, and a trustee of Lehigh University.

Many patents have been granted to him, and he is the author of hundreds of articles on financial and economic subjects, and on professional phases of chemistry. Among these is the discussion of "The Selection and Training of Executives for the Chemical Industry", which appeared in the January, 1940, issue of THE CHEMIST.

The medal will be presented to Dr. Landis at the annual meeting of THE AMERICAN INSTITUTE OF CHEMISTS, to be held at the Edgewater Beach Hotel, Chicago, Illinois, on May 15, 1943.



Agricultural science is bound to find itself in a strengthened position as a result of recent events. . . . Nor will the present emphasis on agricultural science end with the end of the war. . . . To rebuild an exhausted world will necessitate making full use of agricultural science.

At no time have we been faced by so great a challenge. To meet the situation adequately will require the best we have to give in the way of energy and brains. The wisdom and foresight we apply to our work during the war and post-war period of world emergency will be influential not only in having the value of agricultural science fully recognized for a long time to come but in actually shaping the world.

—E. C. AUCHTER,
Research Administrator, U. S. Department of Agriculture.

Senate Bills 607 and 702

Reprinted here for the information of our members. See editorial page 185.

78th Congress, 1st Session.

S. 607

IN THE SENATE OF THE UNITED STATES

February 1, 1943

Mr. Kilgore (for himself, Mr. Pepper, Mr. Murray, Mr. Ball, Mr. Capper, Mr. Green, Mr. Johnson of Colorado, Mr. La Follette, and Mr. Thomas of Utah) introduced the following bill; which was read twice and ordered to lie on the table.

February 4, 1943

Referred to the Committee on Military Affairs

A BILL

To establish an Office of War Mobilization, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That it is the purpose of this Act to (1) inventory and mobilize all the economic resources of the United States, including manpower, facilities, materials, technical and scientific knowledge, and natural resources for maximum use in the provision of military and essential civilian needs; and (2) adjust and stabilize the economy in accordance with the needs for full mobilization and other conditions created by war.

Establishment of an Independent Office and Its Constituent Offices.

Sec. 2. (a) There is hereby created as an independent agency an Office of War Mobilization, which shall be under the direction of a Director of War Mobilization (referred to in this Act as the "Director"). The Director shall be appointed by the President and shall be compensated at the rate of \$20,000 per annum.

(b) The following offices are hereby created within the Office of War Mobilization: (1) Office of Production and Supply, (2) Office

of Manpower Supply, (3) Office of Scientific and Technical Mobilization, and (4) Office of Economic Stabilization. Each such office shall be under the direction of an Administrator who, subject to the approval of the President, shall be appointed by the Director. Each Administrator shall be compensated at the rate of \$15,000 per annum. The Director, subject to the approval of the President, is authorized to appoint such Deputy Administrators as he deems necessary. Each Deputy Administrator shall be compensated at the rate of \$12,000 per annum.

(c) The Director and the several Administrators and their deputies shall be full-time employees and they and all other full-time employees of the Office of War Mobilization shall sever all private business connections and shall receive no salaries or compensations other than those received as employees of the Office of War Mobilization.

Establishment of a Committee on Requirements and Program.

Sec. 3. There is hereby created a Committee on Requirements and Program under the chairmanship of the Director and consisting of the Secretaries of War and the Navy, the Chief of Staff of the Army, the Chief of Naval Operations, and the Administrators of the four constituent offices of the Office of War Mobilization. This Committee shall develop, subject to the approval of the President, a comprehensive national program for maximum use of resources for military and essential civilian needs. This program shall be based on schedules of military requirements furnished by the War and Navy Departments and determinations as to minimum essential civilian needs and available resources of the Office of War Mobilization.

Establishment of a Board of War Mobilization.

Sec. 4 There is hereby created a Board of War Mobilization under the chairmanship of the Director and consisting of four representatives of industry, four representatives of labor, four representatives of agriculture, and four public members at large appointed by the Director with the advice and the approval of the President. The Board shall hold regular meetings at least once a month. The Board and each individual member shall have access to all information of

the Office bearing on the effectiveness and adequacy of war mobilization. The Board is directed to make to the Office of War Mobilization such recommendations relating to policy and operations as it may deem necessary to improve war mobilization. The Board and each member individually shall endeavor to secure maximum cooperation and participation of the American people in war mobilization. To this end, the Board shall direct, extend, and improve the war-production drive, now being carried out through plant labor-management production committees.

Duties and Powers of the Director of War Mobilization.

Sec. 5. (a) The Director shall effectuate the program developed in accordance with section 3 and shall effectuate the necessary adjustments and stabilization of economic conditions through (1) the establishment of the policy and the supervision and coordination of the several constituent offices of the Office of War Mobilization, and (2) the issuance of directives on policy or operations to other Federal agencies concerned with the purposes of this Act; it shall be the duty of all such agencies to execute such directives.

(b) The powers now possessed by the several Federal agencies and subdivisions of agencies which are transferred to the constituent offices of the Office of War Mobilization by section 7 of this Act and all powers provided in section 8 are specifically vested in the Director. Whenever the Director deems it necessary to the furtherance of the purposes of this Act that additional powers be vested in him, he shall make appropriate recommendations to Congress or to the President for such additional powers.

(c) The Director shall perform and exercise the powers and authority granted under this Act in such manner and through such officials of the Office of War Mobilization and of other Federal agencies as he may determine.

(d) The Director is authorized to redistribute the functions of the constituent offices of the Office of War Mobilization and to make such transfers and other internal reorganization which he deems necessary, including the redistribution and transfer of the functions and personnel of the several Federal agencies and subdivisions of agencies transferred to the constituent offices by section 7 of this Act:

Provided, however, That the powers conferred herein do not supersede the authority vested in the President in the First War Powers Act. Whenever the Director deems the transfer of additional Federal agencies or subdivisions of agencies to the constituent offices to further the purposes of this Act he shall recommend to the President that such transfers be made by virtue of the powers vested in the President under the First War Powers Act.

(e) The Director shall establish within his own office a planning and progress reporting staff which shall maintain a record of the extent of mobilization of manpower, facilities, materials, technical and scientific knowledge, and natural resources, and shall check progress on the comprehensive program developed in accordance with section 3 of this Act and on the programs of the several constituent offices.

(f) The Director shall advise and consult with the Board of War Mobilization on all major policies.

Functions of the Constituent Offices.

Sec. 6 The several constituent offices shall exercise the following general functions, through such powers as are vested in the Director or acquired by him in accordance with section 5 and further delegated by him to the several administrators in accordance with section 10 (a): (a) The Office of Production and Supply shall (1) maintain a current inventory of materials, facilities, and other productive resources, other than manpower, and shall maintain a record of the present and projected use of potential industrial capacity; (2) translate the production program developed in accordance with section 3 into a detailed time schedule of end and intermediate military and civilian products by plants; (3) procure through contracts, or otherwise, the requirements of the Departments of War and Navy, and of the Maritime Commission, and all foreign requirements including lend-lease; (4) review progress on all outstanding contracts and renegotiate such contracts where necessary so as to conform to the schedule under (2) above; (5) allocate critical materials and facilities, in accordance with this same schedule; (6) check on the use of facilities, materials, and other production factors through plant inspection; (7) determine in collaboration with the Office of Manpower

Supply a detailed time schedule of plant-by-plant manpower requirements.

(b) The Office of Manpower Supply shall (1) maintain a current inventory of manpower resources and a record of the present and projected use of manpower resources; (2) allocate manpower as between combat and other essential needs including production so as to meet the comprehensive program developed in accordance with section 3 of this Act; (3) develop to the maximum extent, through proper training and placement of workers, all potential manpower resources needed to meet the program and schedules determined under sections 3 and 6 (a) above; (4) arrange for the transfer of workers from plant to plant, industry to industry, and area to area in accordance with the needs of war mobilization; (5) insure through plant inspection the use of labor at maximum effectiveness.

(c) The Office of Scientific and Technical Mobilization shall effect the full and immediate mobilization of scientific knowledge, techniques, and personnel, for the prosecution of war and for making adjustments necessitated by war conditions.

(d) The Office of Economic Stabilization shall effect the adjustments of economic structure and conditions of business or employment needed to effectuate the purposes of this Act. The Office of Economic Stabilization shall have jurisdiction over Federal regulation of civilian purchasing power, prices, rents, wages, salaries, profits, rationing, subsidies, loans, and all other matters relating to the adjustment of the economy to the needs of full war mobilization and to the conditions created by war.

Transfer of Functions and Personnel of Certain Existing Agencies.

Sec. 7. (a) There is hereby transferred to the Office of Production and Supply the functions and personnel of (1) the War Production Board and the Smaller War Plants Corporation; (2) those subdivisions of the War, Navy, and Treasury Departments, of the Maritime Commission, and of the office of Lend-Lease as shall be determined by the Director, subject to the approval of the President, as being related to, engaged in, or concerned with the procurement, manufacture, or other provisions of war matériel; (3) the Federal Loan Agency and the Department of Commerce as shall be determined by

the Director, subject to the approval of the President, as being related to, engaged in, or concerned with financing plant expansions, materials purchases, or other operations bearing on the purposes of this Act; and (4) the Petroleum Administration for War.

(b) There are hereby transferred to the Office of Manpower Supply the functions and personnel of the Selective Service Administration and the War Manpower Commission, excepting that subdivision transferred under (c) below.

(c) There is hereby transferred to the Office of Scientific and Technical Mobilization the functions and personnel of the National Roster of Scientific and Specialized Personnel of the War Manpower Commission.

(d) There is hereby transferred to the Office of Economic Stabilization the functions and personnel of the Office of Price Administration and the Office of Economic Stabilization.

(e) All persons attached to the military services who are transferred to the Office of War Mobilization by this Act or who are subsequently so transferred shall be relieved from active service for such lengths of time as shall be requested by the Director.

Amendments to Existing Statutes and Additional Powers and Duties.

Sec. 8. (a) The Selective Service Act is hereby amended as follows: "The Director of War Mobilization through the Office of War Manpower shall establish such organization and procedure for determining occupational deferment as he shall deem proper, and the findings arising through such procedures and organizations shall supplant those heretofore made by the local selective-service boards."

(b) The Director, through the Office of War Manpower, is empowered to make loans or grants to cover costs of subsistence and transportation of workers, including their families, being placed in or transferring to war essential civilian activity whenever he deems such assistance will further the purposes of this Act. The maximum grant to any individual family shall not exceed \$200 and the maximum loan shall not exceed \$300.

(c) The Director is authorized and directed through the Office of Scientific and Technical Mobilization to (1) appraise current use of scientific and technical personnel and facilities and make plans and

proposals for maximum mobilization of such personnel and facilities for the war effort; (2) review all proposals for development of improved processes, products, and materials or for other scientific research and development, including development of models and pilot plants, which may be brought to the attention of the Office of War Mobilization or initiated by the staff of the Office, and promote such proposals deemed in aid of war mobilization through loans or grants to public agencies or private persons or through the establishment of research facilities and pilot plants under the direction of the Office; (3) promote the widest and fullest utilization of advanced processes, techniques, and products; and for these purposes he shall have access to all production facilities and all information bearing on processes, products, materials, or other factors of production; (4) arrange and where necessary compel the licensing for the duration of the national emergency of patents, secret processes, and special technical information at reasonable compensation in order to foster their wider utilization where this is deemed necessary in the interest of war mobilization.

Funds.

Sec. 9. (a) All appropriations for any agency available for use in connection with any function transferred to the Office of War Mobilization are hereby transferred and shall be available to the Office of War Mobilization for the purpose of exercising the function so transferred. For the purposes of this subsection, the Director of War Mobilization shall determine, subject to the approval of the President, which functions have been so transferred. Funds appropriated for the Army, Navy, Maritime Commission, and lend-lease procurements shall not be limited in their expenditure to the original purposes specified in their appropriation but shall be based on the program determined in accordance with section 3 of this Act.

(b) There is hereby authorized to be appropriated \$200,000,000 to the Office of War Mobilization to defray loans or grants made under the authority of section 8 (b). There is hereby authorized to be appropriated \$200,000,000 to the Office of War Mobilization to defray costs or loans or grants or other expenditure under the authority conferred in section 8 (c) (2) of this Act.

Decentralization of Activities.

Sec. 10. (a) The Director shall delegate the powers and duties conferred in this Act to the Administrators of the constituent offices to the maximum extent consistent with proper determination of policy and coordinated operations.

(b) The Director and the several Administrators are hereby directed to decentralize operations on an area basis to the maximum extent consistent with efficient operation.

(c) The Director is authorized and directed to employ State and other area representatives, who shall coordinate and integrate the operations of the constituent offices in these States and other areas.

(d) The Director and the several Administrators are authorized and directed to establish boards similar in structure and function to the board established under section 5 of this Act on a national, area, and industrial basis.

Sec. 11 (a) All laws or parts of laws conflicting with the provisions of this Act are to the extent of such conflict suspended while this Act is in force.

(b) Upon the termination of this Act all executive or administrative agencies, governmental corporations, departments, commissions, bureaus, offices, or officers shall exercise the same functions, duties, and powers as exercised prior to the date of enactment of this Act.

(c) This Act shall take effect immediately upon its enactment and shall remain in force during the continuance of the present war and for six months after the termination thereof, or until such earlier date as the Congress by concurrent resolution or the President may designate.

Sec. 12. (a) All orders, rules, regulations, permits, or other privileges made, issued, or granted by or in respect of any agency or function transferred to any other agency or function under the provisions of this Act, and in effect on the date this Act takes effect, shall continue in effect to the same extent as if such transfer had not occurred, until modified, superseded, or repealed.

78th Congress, 1st Session.

S. 702

IN THE SENATE OF THE UNITED STATES

February 11, 1943

Mr. Kilgore introduced the following bill; which was read twice and referred to the Committee on Military Affairs.

A BILL

To mobilize the scientific and technical resources of the Nation, to establish an Office of Scientific and Technical Mobilization, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

Declaration of Policy.

Section 1. The Congress hereby recognizes that the full development and application of the Nation's scientific and technical resources are necessary for the effective prosecution of the war and for peacetime progress and prosperity, and that serious impediments thereto consist in—

the unassembled and uncoordinated state of information concerning existing scientific and technical resources;

the lack of an adequate appraisal, and the unplanned and improvident training, development, and use, of scientific and technical personnel, resources, and facilities in relation to the national need;

the consequent delay and ineffectiveness in meeting the urgent scientific and technical problems of the national defense and essential civilian needs;

the trend toward monopolized control of scientific and technical data and other resources with lack of access thereto in the public interest; and

the absence of an effective Federal organization to promote and coordinate, in the national interest, scientific and technical developments.

The purposes of this Act accordingly are—

(1) to appraise the current use of scientific and technical knowledge, facilities, and personnel, and to develop comprehensive national

programs for the maximum use of science and technology in the national interest in periods of peace and war;

(2) to mobilize for the prosecution of the war all scientific and technical facilities and personnel;

(3) to facilitate after the war the transition of the national economy from the tasks of war to peacetime enterprise;

(4) to assemble, coordinate, and develop for use, in the public interest, all scientific and technical data and facilities; to facilitate access to scientific and technical information and literature and to aid and encourage the writing and publication thereof;

(5) to promote the full and speedy introduction of the most advanced and effective techniques—for the benefit of agriculture, manufacturing, distribution, transportation, communication, and other phases of productive activity; for economical and efficient Federal, State, and local government; and for the national defense and general welfare;

(6) to aid, encourage, and protect the research and enterprise of inventors, scientists, technicians, scientific and educational institutions, research laboratories and Government establishments engaged in scientific and technical work, and to make their resultant discoveries and data more readily available, and without discrimination, to all sections of industry, agriculture, and the public, in order to aid the war effort at the present time and in order to promote full employment and higher standards of living after the war;

(7) to discover and develop substitutes for strategic and critical materials, and to promote the most beneficial use of agricultural, mineral, and other natural resources;

(8) to promote interest in scientific and technical education, and to provide for all qualified persons the means of scientific and technical training and employment;

(9) to provide guidance in scientific and technical matters to the President, the Congress, and all Federal, State, and local government agencies and establishments, and to contribute guidance and, in all proper cases, financial and other assistance to solution of the technical and scientific problems of industry, agriculture, and of any agency or establishment or individual inventor;

(10) to promote the maintenance and expansion of free enterprise by making available to smaller businesses the benefits of scientific advancement;

(11) to standardize, when in the public interest, scientific and technical designs, practices, and specifications; and

(12) to establish a national scientific and technical office to assure maximum cooperation and integration of the facilities and personnel of governmental and private agencies, institutions, and employers for the above purposes, and to coordinate the activity of these facilities and personnel, where necessary, in the national interest. This Act may be cited as the "Science Mobilization Act".

Definitions.

Sec. 2. As used in this Act—

(a) "Scientific and technical facilities" shall include real property and personal property, tangible and intangible, used or intended to be used for scientific or technical purposes, programs, research, projects, and developments and shall include further all methods, processes, procedures, techniques, designs, specifications, patents, inventions, and scientific or technical information or knowledge of every description used or intended to be used for scientific or technical purposes in research and development or in the production or supply of war or civilian goods or services.

(b) "Scientific and technical personnel" shall include all persons, excepting physicians and dentists, who have completed any course of study in any college or university in any branch of science or its practical application or who have had not less than an aggregate of six months' training or employment in any scientific or technical vocation.

(c) "Agency or establishment" shall mean any agency, board, department, office, bureau, or other body of the Federal or any State or local government, or any person, firm, or partnership engaged in business for profit, or any corporation, profit or nonprofit, association, school, college, and university.

Establishment of Independent Office.

Sec. 3 (a) There is hereby created, as an independent agency of the Federal Government, the Office of Scientific and Technical Mobilization (hereinafter referred to as "the Office") which shall be

administered by an Administrator to be appointed by the President, by and with the advice and consent of the Senate, and to serve at the pleasure of the President. The Administrator shall receive a salary at the rate of \$12,000 a year. The Administrator shall appoint, fix the compensation, and define the authority and duties of such officers, employees, attorneys, and agents as he shall deem necessary to carry out the purposes and provisions of this Act and to transact the business of the Office. Such appointments shall be made in accordance with the provisions of the civil-service laws and regulations and the Classification Act of 1923, as amended: *Provided*, That when the Administrator determines it to be necessary in order to effectuate the purposes and provisions of this Act he may waive these requirements. The Office may make such reimbursement as it may deem necessary and proper for the traveling, subsistence, or other expenses incurred in the performance of official duties by its officers, employees, attorneys, agents, and by other persons or members of committees, boards, or other bodies designated by it to carry out such duties. The Office shall be located in or near the District of Columbia, but the Administrator may establish such branch offices outside of the District of Columbia area as may be required to carry out the purposes of the Act.

(b) Any person employed on a full-time basis by the Office shall receive no salary, wages, or other compensation from any source except the Office.

(c) There is hereby established within the Office a National Scientific and Technical Board (hereinafter referred to as the "Board") consisting of the Administrator, who shall be Chairman, and six other members, to be appointed by the President, and to include one representative each for industry, agriculture, labor, the consuming public, and two additional members at large who shall be scientists or technologists. Each such member shall receive compensation at the rate of \$10,000 a year. The Board and its several members shall perform such duties under the direction and control of the Administrator as he may assign to them; they shall have access to all information of the Office relating to the administration thereof.

(d) There is hereby created a National Scientific and Technical Committee consisting of the Board, one representative each for each

of such Federal departments as the President shall designate, four additional representatives of the consuming public, three additional scientists or technologists, and six additional members representing labor and six additional members representing management (including small business), in the major fields of production and service to be appointed by the President and to serve without compensation, to advise and consult with the Administrator, who shall be the Chairman thereof, upon the basic policies governing the administration of this Act. Such committee shall meet regularly, not less than once a month.

(e) There is hereby transferred to the Office the powers and personnel of the National Roster of Scientific and Specialized Personnel of the War Manpower Commission, together with its records, furniture, and equipment, and all its unexpended balances of appropriations or other funds available to carry out its powers and duties.

Powers of the Office.

Sec. 4. To effectuate the purposes of this Act, the Office shall be vested with the following powers and duties which it shall exercise and perform under the direction and control of the Administrator:

(a) To take and keep a census of scientific and technical facilities, requirements, and personnel in the United States and its possessions and to provide archives for all scientific and technical material coming into the possession of the Government or any agency or department thereof.

(b) To formulate and promote projects and programs for the development and use of scientific and technical facilities and personnel and, when necessary, to initiate and carry out such projects.

(c) To foster and develop scientific and technical methods, to promote their application in the national welfare, either within the Office or by other auspices, public or private, and to promote and provide training and participation in science and in its application.

(d) To ascertain and assess scientific and technical developments in relation to, and to study their impact upon, the national welfare, or any particular category thereof.

(e) To solicit and to receive aid and support from any source for the advancement of scientific and technical methods.

(f) To coordinate the scientific and technical data, methods, and

facilities of, or available to, all agencies and departments of the Federal Government.

(g) To foster international cooperation in scientific discovery and the application thereof; to acquire information with respect thereto from other countries and their nationals; to exchange scientific and technical personnel and information with such countries; and to engage in other suitable forms of international collaboration relating to science and technology.

(h) To make available, upon request, to the President, to the Congress, and to other persons or establishments (upon such conditions as the Administrator shall prescribe), technical guidance and assistance and any record or other data necessary therefor.

(i) To review specifications, standards, and designs of military and civilian products and services and their methods of production and supply and to recommend suitable simplifications and changes therein.

(j) To finance by loan, grant, exchange, purchase, or otherwise the operations or functions, or any of them, authorized by this Act, and, for the same purpose, to make or acquire any contract, guaranty, indemnity, stipulation, lease, or other instrument, to acquire, improve, and alter real and personal property, and to enter into any other transaction necessary or appropriate for the performance of its duties or powers.

(k) To acquire patents and patent rights, and to authorize the use thereof, subject to the provisions of section 7 of this Act, and to authorize the use or other disposition of any other property belonging to, or controlled by, the Office, upon such terms and conditions and for such compensation as the Administrator shall determine, which compensation shall be payable to the Office.

(l) To establish a system of merit awards to be granted to any agency, establishment, or person making any outstanding scientific or technical contribution to the national defense or the general welfare.

(m) To make, amend, and rescind appropriate rules and regulations to carry out the purposes of this Act and all the powers and duties vested in the Office, which rules and regulations shall have the force and effect of law.

(n) To avail the Office of the information, services, facilities,

officers, and employees of any Federal establishment in carrying out the purposes and provisions of this Act.

(o) To conduct such research and investigation touching upon the use and development of scientific and technical facilities and personnel as the Office may deem necessary and appropriate to carry out the purposes of this Act.

Mobilization of Personnel.

Sec. 5. To mobilize scientific and technical manpower for the prosecution of the war and otherwise to carry out the purposes of this Act—

(a) Section 10 (a) of the Selective Training and Service Act of 1940, as amended, is further amended by adding at the end thereof the following:

“Any provision of this Act to the contrary notwithstanding—

“(1) whenever the Administrator of the Office of Scientific and Technical Mobilization deems it necessary, to carry out the purpose of the Science Mobilization Act, that occupational deferments be granted to persons engaged in any particular scientific or technical occupation or having or receiving any scientific or technical training, he shall certify to the Chairman of the War Manpower Commission that (1) such occupation or training is of a scientific or technical character, and (2) that it is critical in the war effort; and such Chairman shall thereupon approve or disapprove each such certification. In event of such approval, such Administrator shall thereafter determine, subject to such rules, quotas, schedules, and procedures as the Chairman of the War Manpower Commission may prescribe, the facts and circumstances pertinent to the occupational deferment of any person within the scope of such certification and whether any such deferment should be made;

“(2) any determination respecting occupational deferment made by the Administrator of the Office of Scientific and Technical Mobilization in accordance with the authority of this section, as amended, shall be conclusive upon all civilian local boards and any other civilian agencies functioning under this Act.”

(b) During the existence of a state of war and for six months thereafter, the Administrator is authorized to prescribe and promulgate appropriate rules, regulations, procedures, and methods, subject to direction by the Chairman of the War Manpower Commission,

for the training, classification, and employment of all scientific and technical personnel by any person, agency, or establishment, public or private.

Mobilization of Facilities.

Sec. 6. To mobilize scientific and technical facilities for the defense of the United States and otherwise to effectuate the purposes of this Act—

(a) (1) During the existence of a state of war, whenever the Administrator determines, subject to review by the President, that (1) the use of any scientific or technical facility, or of any license, easement, privilege, or other right therein, is needed for the defense of the United States or the prosecution of the war; (2) such need is immediate and impending and such as will not admit of delay or adequate fulfillment by resort to any other source of supply; and (3) all other means of obtaining the use of such facility or of any right therein, upon fair and reasonable terms, for the defense of the United States or the prosecution of the war have been exhausted, he is authorized to requisition such facility and any right therein and to dispose of the same in such manner, not inconsistent with this Act, as he may determine to be necessary for the defense of the United States or the prosecution of the war upon the payment of fair and just compensation for such property to be determined in the same manner as provided in Public Law Numbered 274, Seventy-seventh Congress, as amended, except that the Administrator, subject to review by the President, shall make all determinations in the first instance, respecting fair value of such facility and right: *Provided*, That the requisitioning power herein granted shall not extend to any patent itself but shall be confined to licenses or any other right therein respecting user, together with the right to grant sublicenses.

(2) Whenever the Administrator determines that such facility or any right therein requisitioned pursuant to subsection (1) of this section is no longer needed for the defense of the United States or the prosecution of the war, he shall return the same to the person from whom it was requisitioned if such person desires return of the property or facility, in the same manner as provided respecting returns of requisitioned property in sections 1 and 2 of Public Law Numbered 274, Seventy-seventh Congress, as amended, except that

no such return shall be required of the Administrator until six months after the termination of the state of war and that any determination of fair value made in connection with such return shall be made by the Administrator in the first instance, subject to review by the President.

(3) The Administrator shall include in his reports directed to be made under section 11 of this Act a separate part with respect to his operations under this subsection.

(b) During the existence of a state of war, the Administrator is authorized to conduct investigations of and concerning the scientific and technical facilities used or capable of use in war or essential civilian production or supply with the view to ascertaining and evaluating the factors affecting efficiency in such production or supply. The Administrator shall submit to the producers and suppliers concerned, and to all appropriate Federal establishments, his recommendations of any improvements disclosed by his investigations to be necessary or desirable for the national defense or the prosecution of the war.

(c) The Administrator is authorized to represent any agency or establishment before the War Production Board or any other appropriate Federal establishment upon any application for allocation of, and priority ratings for, any critical material and equipment for use in scientific and technical research and development. All such applications shall be made only by and through the Office pursuant to appropriate regulations to be prescribed by the Administrator and approved by the Chairman of the War Production Board.

**Production of the Public Interest In Discoveries and Developments
Financed by the United States.**

Sec. 7. (a) Any provision of law to the contrary notwithstanding, the Office is hereby vested with the exclusive right to use, and with the exclusive right to license others to use, (1) any invention, discovery, patent, or patent right which has heretofore resulted, or shall hereafter result, from research or invention for the carrying on of which the United States or any department, agency, or establishment thereof either has heretofore contributed at any time since the declaration of national emergency on May 27, 1941, or shall hereafter contribute, any money, credit, physical facilities, or personnel; and (2) any invention, discovery, patent, or patent right which is at

the time of the enactment of this Act, or shall hereafter become, to any extent the property of the United States or of any department, agency, or establishment thereof.

(b) The Office is authorized, subject to such rules and regulations relating thereto as the Administrator may adopt, to grant to any department, agency, or establishment of the United States a non-exclusive license to use any invention, discovery, patent, or patent right which has been vested in the Office by virtue of the provisions of subsection (a) of this section.

(c) The Office is authorized to grant to others than a department, agency, or establishment of the United States a nonexclusive license to use any invention, discovery, patent, or patent right which has been vested in the Office by virtue of the provisions of subsection (a) of this section upon such terms and conditions, including payment to the Office of a fee or charge for user, as the Administrator may prescribe: *Provided*, (1) That no such license shall be granted unless the Administrator shall first be satisfied and shall find that no monopoly, monopolistic practice, or unfair competitive advantage will be promoted thereby, and (2) that the charge for user prescribed by the Administrator shall either be a uniform nominal fee or a charge graduated to the volume of production resulting from user, or such other scale of charges that shall be necessary or desirable in order to effectuate the purposes of the preceding provisions.

(d) Any owner or assignee of, or any person having an interest in, any invention, discovery, patent, or patent right which has been vested in the Office by virtue of the provisions of subsection (a) of this section shall be paid fair and just compensation for any deprivation of property right resulting from such vesting, to be determined in the same manner as provided in Public Law Numbered 274, Seventy-seventh Congress, as amended, except that the Administrator, subject to review by the President, shall make all determinations in the first instance respecting fair and just compensation: *Provided*, That the Office is also authorized to make suitable compensation, as determined by the Administrator with the approval of the Board, to individual inventors or discoverers or to individuals contributing to inventions or discoveries including employees of the Federal

Government, as a reward for their inventions or discoveries or for their contributions thereto when such inventions or discoveries are deemed by the Administrator to be in the national interest and when they are vested in the Office by the provisions of subsection (a) above.

(e) Except as otherwise specifically provided in this Act, neither the Administrator nor any other department, agency, or establishment of the United States shall sell, assign, grant, or otherwise dispose of any invention, discovery, patent, patent right, license, or license right, which has been or shall become vested, acquired, or retained by them or any of them and any transaction or arrangement in violation of this subsection shall be void and of no effect.

(f) The Administrator is hereby authorized and directed (1) to prescribe and promulgate appropriate rules and regulations which shall thereupon have the force and effect of law for the enforcement of the provisions of this section, and (2) to require and incorporate in all licenses, sublicenses, and other instruments and writings made in pursuance of provisions of this Act, such terms and conditions as shall apply the intent and purpose of this section to the facts and circumstances of the particular transaction.

Information.

Sec. 8. (a) It shall be the duty of all persons and establishments, when so requested by or in behalf of the Administrator, to furnish, to the best of their knowledge, any information, data, or record concerning scientific and technical facilities during the existence of a state of war and concerning scientific and technical personnel at all times. Any person or establishment refusing or willfully failing to furnish the same or willfully making any false or fraudulent statement in answer to any such request shall, upon conviction thereof, be fined not more than \$5,000 or imprisoned for not more than one year, or both.

(b) The Administrator is hereby directed to maintain the secrecy or restricted character, as the case may be, of any information or data coming into his possession or control under this Act, which is declared to be secret or restricted by other provision of law or the secrecy or restriction of which the Administrator deems otherwise essential to maintain in the public interest. There is hereby established a committee to consist of one member each representing the War Department, the Navy Department, the Office, and any such

other Federal establishments as the President may designate which shall advise the Administrator respecting any matter or measure necessary to carry out the purpose of this section.

Funds and Finances.

Sec. 9. (a) The sum of \$200,000,000 is hereby authorized to be appropriated to carry out the provisions and purposes of this Act. Further sums are authorized to be appropriated as may be necessary and proper for the same purposes. Such sums or any part thereof, together with any moneys realized or received by the Administrator from his exercise of any power granted to him by this Act, may be designated and used at his direction as a revolving fund or otherwise to carry out any power so granted.

(b) Further to effectuate the purposes of this Act, the Administrator is authorized, whenever he deems it necessary and expedient, to create or to organize a corporation or corporations, as instrumentalities for the more effective exercise and performance of his own powers and duties or those of the Office, or any part thereof. The Administrator may make loans to, or purchase in whole or in part from time to time, the capital stock of any such corporation for any purpose within the powers of the corporation, and on such terms and conditions as the Administrator may determine: *Provided*, That such capital stock shall be purchased and owned only by the Office.

Subpenas and Penalties.

Sec. 10. For the purposes of any investigations authorized by this Act, the Administrator and any official designated by him may administer oaths and affirmations, subpoena witnesses, take evidence, and require the production of books, papers, and other documents which the Administrator or such officer deems to be relevant or material to the inquiry. Such attendance of witnesses and the production of such documentary evidence may be required from any place in the United States or any Territory or possession thereof at any designated place or hearing. In cases of contumacy by, or refusal to obey a subpoena served upon any person, the district court for any district in which such person is found, resides, or transacts

business, upon application by or in behalf of the Administrator, shall have jurisdiction to issue an order requiring such person to appear and give testimony or to appear and produce documents, or both; and any failure to obey such order of the court may be punished as a contempt thereof. Witnesses subpoenaed under this section shall be paid the same fees and mileage as are paid witnesses in the district courts of the United States. No person shall be excused from complying with any requirements under this section because of his privilege against self-incrimination, and the immunity provisions of the Compulsory Testimony Act of February 11, 1893 (U. S. C., 1934 edition, title 49, sec. 46), shall apply with respect to any individual who specifically claims such privilege. Any person who willfully violates any order, rule or regulation promulgated by the Administrator under the authority of this Act shall, upon conviction thereof, be fined not more than \$5,000 or imprisoned for not more than one year, or both.

Periodic Reports.

Sec. 11. The Administrator shall render a report in writing to the President and to the Congress in January of each year summarizing the activities of the Office in the calendar year just ended and reporting on the status and progress of science and on scientific and technical problems affecting the public interest together with such recommendations as he may deem appropriate within the purposes of this Act. During a state of war, he shall make interim reports quarterly during each of the months of January, April, July, and October.

Severability Clause.

Sec. 12. If any clause, sentence, paragraph, or part of this Act shall be adjudged by any court of competent jurisdiction to be invalid, such judgment shall not affect, impair, or invalidate the remainder thereof but shall be confined in its operations to the clause, sentence, paragraph, or part thereof directly involved in the controversy in which such judgment shall have been rendered.



COUNCIL

OFFICERS

President, Gustav Egloff
Vice-president, Donald Price

Secretary, Howard S. Neiman
Treasurer, Walter J. Murphy

COUNCILORS

E. R. ALLEN
DONALD H. ANDREWS
FRANK G. BREYER
STUART R. BRINKLEY

HARRY L. FISHER
CHARLES N. FREY

FRANK O. LUNDSTROM
ROBERT J. MOORE
FOSTER D. SNELL
W. D. TURNER

CHAPTER REPRESENTATIVES

<i>New York</i>	<i>Niagara</i>	<i>Philadelphia</i>	<i>Washington</i>
MARSTON L. HAMLIN	A. W. BURWELL	GILBERT E. SEIL	ALBIN H. WARTH

February Meeting

A meeting of the National Council of THE AMERICAN INSTITUTE OF CHEMISTS was held on Friday February 26, 1943, at The Chemists' Club, 52 East 41st Street, New York, N. Y. at 6.30 p. m.

In the absence of President Egloff, Vice-president Donald Price presided.

The following officers and councilors were present.

Messrs: E. R. Allen, S. R. Brinkley, H. L. Fisher, M. L. Hamlin, W. J. Murphy, H. S. Neiman, D. Price, G. E. Seil, W. D. Turner and M. Toch.

Miss V. F. Kimball was present.

Upon motion made and seconded, the minutes of the previous meeting were approved.

Dr. Price read the tentative program for the Annual Meeting, which will be held at the Edgewater Beach Hotel, Chicago, Illinois.

Dr. Price announced that the Kilgore Bill (S.2721) which died in the previous Senate, had been reintroduced in the present Senate as S.702. A War Mobilization Bill, S.607 was also introduced. Each member of the National Council was asked to obtain copies of these bills and read them.

Dr. Price informed the Council that Dr. Egloff had sent copies of THE CHEMIST containing S.2721 and copies of *The Professional Engineer* on the same subject, to the local sections of the American Chemical Society, and also to 275 scientific societies. Dr. Egloff has recently made a speaking tour

of the South on this subject.

A letter from the American Association for the Advancement of Science, expressing approval of our stand on this bill, was read.

The list of those nominated for Councilorships in the Institute was read, and the Council suggested that the name of Dr. Charles L. Thomas be added.

Dr. Price showed a proof of the membership leaflet which was approved.

Dr. Turner, Chairman of the Committee on Licensing, reported that Dr. Toch had visited Albany in connection with the proposed licensing bill; that members of the Committee had held conferences with key people regarding it. Dr. Toch reported on the details on his trip to Albany.

Upon motion made and seconded, the Secretary was requested to send Dr. Northey, Chairman of the New York Chapter, a letter informing him of what steps we should take to publicize this bill, and to suggest that a letter be sent to the members of the New York and Niagara Chapters to promote publicity for the bill. Material formerly prepared by the New York Chapter, now in Dr. Turner's hands, is to be sent to Dr. Northey.

Upon motion made and seconded, the following new members were elected:

FELLOWS

Baldaste, Robert F.

(1943), *Head of Information Division*, Standard Oil Company (Indiana), Whiting, Indiana.

Blake, John T.

(1943), *Director of Research*, Simplex Wire and Cable Company, 79 Sidney Street, Cambridge, Mass.

Bolley, Don S.

(1943), *Head of Organic Research Department*, National Lead Company, 105 York Street, Brooklyn, N. Y.

Clarke, Kenneth E.

(1943), *Vice-president*, Charles R. Long, Jr. Company, 1630 West Hill Street, Louisville, Kentucky.

Dalton, John N.

(1943), *Chief Chemist*, Pacific Mills, Lawrence, Mass.

Federoff, Basil T.

(1943), *Chief Chemist*, Fraser-Brace Engineering Company, Inc., Keystone Ordnance Works, Geneva, Penna.

Friedman, Harry

(1943), *Technical Director*, United States Kalsomine Company, 65 Bridge Street, Newark, N. J.

Frost, Walter S.

(1943), *Chemist and Director*, Burnham Soluble Iodine Company, Auburndale, Mass.

Prebluda, Harry J.

(1943), *Development Biochemist*, U. S. Industrial Chemicals, Inc., 60 East 42nd Street, New York, N. Y.

Scott, Cecil E.

(1943), *Patent Engineer*, Union Carbide and Carbon Corporation, New York, New York.

Sklarew, Samuel

(1943), *Chemical Engineer, Project Leader*, Ralph L. Evans Associates, 250 E. 43rd Street, New York, N. Y.

Thompson, Wesley R.

(1943), *Technical Director*, Catalin Corporation, Fords, New Jersey.

Tortorici, Peter V.

(1943), *Materials Inspector*, U. S. Maritime Commission, 45 Broadway, New York, N. Y.

ASSOCIATES

Immediata, Tony M.

(A.1943), *Research Chemist*, Sharp and Dohme, Inc., Medical Research Division, Glenolden, Penna.

Kell, Robert W.

(A.1943), *Research Chemist*, National Aluminate Corporation, 6216 W. 66th Place, Chicago, Illinois.

JUNIOR

Smith, Merton B.

(J.1943), *Chemist*, Johns Manville Company, Manville, N. J.

Upon motion made and seconded, the Secretary was requested to prepare a list of applicants for membership,

with their degrees, experience, and publications to be submitted to the Councilors at each meeting of the Institute.

Upon motion made and seconded, the following changes in rank were approved.

Bare, Bruce M., Jr.

Raised from Associate to Fellow.

Doherty, Harry G.

Raised from Junior to Associate.

Wilson, John S.

Raised from Student to Junior.

There being no further business, adjournment was taken.

New Applications for Membership

For Fellows

Baird, Ronald J.

Research Chemist, Pennsylvania Sugar Company, Philadelphia, Penna.

Dobkiewicz, Hedwig Marie

Research Chemist, Pennsylvania Sugar Company, Philadelphia, Penna.

Fligor, Kermith K.

Process Engineer, The Bakelite Corporation, Bound Brook, N. J.

Hanslick, Roy S.

Chemical Engineer, Eastern Regional Research Laboratory, Chestnut Hill, Philadelphia, Penna.

Larmour, Harry McC.

Chief Chemist, Yosemite Portland Cement Corporation, Box 799, Merced, California.

Leeds, Morton W.

Research Chemist, Interchemical Corporation, Research Laboratories, New York, N. Y.

Morgan, Coleman P.

Chief Chemist, The Vulcanized Rubber Company, Morrisville, Penna.

Patton, Alva Rae

Professor and Head, Chemistry Research Department, Montana Experiment Station, Bozeman, Montana.

To be raised from Junior to Associate

Sausville, Joseph

Graduate Teaching Assistant, Department of Chemistry, State University of Iowa, Iowa City, Iowa.

CHAPTERS

Chicago

Chairman, Vanderveer Voorhees

Vice-chairman, Hilton I. Jones

Secretary-treasurer, Charles L. Thomas

Universal Oil Products Company

Riverside, Illinois.

A meeting of the Chicago Chapter is being held on March 26, 1943, at Huyler's Restaurant, 310 South Michigan Avenue, Chicago. The purpose of the meeting is to discuss "Scientific, Technical, Inventive, and Industrial Mobilization for War" with reference to U. S. Senate Bills S-607 and S-702. The speaker is Dr. Arthur Guillaudeu, research chemist of Swift and Company, and chairman of the Committee on Professional Status, Chicago Section of the American Chemical Society. Discussors include Dr. H. A. Wagner, past president of the American Association of Engineers; Robert C. Brown,

Jr., patent attorney and engineer, and chairman of the Associated Defense Committees, Chicago Technical Societies; and Professor Harry McCormack, director of the Chemical Engineering Division of the Illinois Institute of Technology.

The Chicago Chapter of the Institute will act as hosts for the Annual Meeting. Gene Abson, F.A.I.C., director and chief chemist of the Chicago Testing Laboratory, Inc., is chairman of the Committee on Arrangements for the Annual Meeting.

New York

Chairman, Elmore H. Northey

Vice-chairman, Paul J. Witte

Secretary-treasurer, A. Lloyd Taylor

Oakite Products Company, 22 Thames Street

New York, N. Y.

Council Representative, Marston L. Hamlin

Niagara

Chairman, L. M. Lawton

Vice-Chairman, George W. Fiero

Secretary, Margaret C. Swisher

Department of Chemistry

University of Buffalo

Buffalo, New York

Council Representative, Arthur W. Burwell

Carl H. Rasch, Alternate

Pennsylvania

Chairman, J. M. McIlvain

Vice-chairman, Maurice L. Moore

Secretary-treasurer, Clinton W. MacMullen

6650 Large Street

Philadelphia, Penna.

Council Representative, Gilbert E. Seil

News Reporter to THE CHEMIST, Kenneth A. Shull

THE Pennsylvania Chapter held a meeting on Tuesday, February twenty-third at the Christian Association Building.

Following a dinner and short business meeting, the Chairman introduced Dr. Harry L. Fisher, director of research, U. S. Industrial Chemicals, Inc. and past president of THE AMERICAN INSTITUTE OF CHEMISTS. Dr. Fisher discussed "The Synthetic Rubber Problem".

Previous to the United States becoming involved in war, the amount of crude rubber required followed very closely the number of automobile registrations. During 1941 there were some 1,000,000 tons of crude rubber imported to our country.

After Pearl Harbor, however, importation of this vital war material

was largely cut off, and it became necessary to manufacture synthetic rubbers in huge quantities.

Certain articles were made of rubber prior to 1839 but they became soft and sticky in summer and inelastic in winter. In that year, however, Charles Goodyear discovered vulcanization, a process whereby crude rubber is given an entirely new set of properties by heating it with sulfur. Vulcanized rubber, unlike the crude material, returns to its original position after being stretched, i.e. it shows no apparent set; it may be ground into shreds whereas crude rubber becomes soft and tacky; it shows greater tensile strength and greater resistance to the action of solvents and abrasion.

Faraday, in 1826, showed that rubber

is hydrocarbon in nature and that its empiric formula is C_5H_8 . In 1860 Williams obtained a water-white liquid from rubber possessing the same formula, C_5H_8 . This he named isoprene. Somewhat later Bouchardat converted isoprene into an elastic mass. This was the start of the synthetic rubber industry.

Today there are many synthetic rubbers on the market; all are made by the same general processes: (1) synthesis of the monomeric raw materials, and (2) polymerization or condensation to the final polymer.

Some of the principle synthetic rubbers and materials from which they are manufactured follow:

from

- | | |
|----------------|---|
| 1. Buna SKA | |
| Buna SKB | 1, 3-Butadiene |
| Buna Ker | |
| 2. Neoprene | |
| Sovprene | Chloroprene |
| Mustone | |
| 3. Vistanex | Isobutylene |
| 4. Koroseal | Vinyl Chloride |
| 5. Buna S | |
| Buna SS | Butadiene and styrene |
| 6. Perbunan | Butadiene and |
| Perbunan extra | acrylonitrile |
| 7. Thiokol A | Ethylene dichloride and sodium tetrasulfide |
| 8. Butyl | Isobutylene and isoprene |
| 9. Chemigum | Butadiene and other |
| Hycar OR | substances (a company secret) |

Butadiene, which enters into the manufacture of many of the synthetic rubbers, is obtained from petroleum, natural gas, and alcohol; isoprene is

obtained by cracking turpentine; isobutylene comes from petroleum; neoprene is made from acetylene; vinyl chloride is prepared by the addition of hydrogen chloride gas to acetylene; ethylene dichloride comes from petroleum and natural gas.

Synthetic rubbers are superior to the natural product in that they are more resistant to deterioration by oils, organic solvents, acids, and strong oxidizing agents; they possess a lower permeability to gases. On the other hand, natural rubber is more elastic and is more resistant to stiffening at low temperatures.

Dr. Fisher's talk was well illustrated with slides and samples of the various articles made from synthetic rubber.



The Perkin Medal, awarded annually by the American Section of the Society of Chemical Industry, was presented January 9 to Dr. Robert E. Wilson, President of Pan American Petroleum and Transport Company at a joint meeting of the American Section of the Society of Chemical Industry, the American Institute of Chemical Engineers, the American Chemical Society, the Electrochemical Society and the Société de Chimie Industrielle.



Dr. Ernest W. Reid, F.A.I.C., was appointed Deputy Director General for Industry Divisions of the War Production Board, to succeed Curtis E. Calder. Mr. Calder was named Director General for Operations.

Washington

President, L. F. Rader, Jr.

Vice-president, Donald H. Andrews

Treasurer, L. R. Heiss

Secretary, Ernest J. Umberger

207 Albany Avenue, Takoma Park, Maryland

News Reporter to THE CHEMIST, T. H. Tremearne

Council Representative, Albin H. Warth

THE winter meeting of the Washington Chapter was held at Wardman Park Hotel, Tuesday evening, February eighth, with Chapter president L. F. Rader, Jr., presiding.

The business part of the meeting was brief. Mr. Rader announced the following committees: Membership: F. O. Lundstrom and J. W. McBurney. Student Medal Awards: Miss Mary A. Rolland. Nominations: J. R. Adams, R. B. Deemer, F. O. Lundstrom. Meeting Accomodations: L. R. Heiss and T. H. Tremearne.

The president introduced Dr. Leonard P. Schultz, a member of the staff of the National Museum. Dr. Schultz presented a very interesting and educational account of his recent trip to Lake Maracaibo, Venezuela, where he collected about 22,000 specimens of fish for the National Museum.

Kodachrome slides showed the collecting expeditions, the scenery, and the modes of living of the natives both on land and in stilt-houses built over the lake.

BOOKS

ORGANIC CHEMISTRY. By William T. Caldwell. Houghton, Mifflin Company. 736 pp. 9½" x 6½". \$4.25.

To a systematic, general organic chemistry textbook has been added the newer chemistry of vitamins, sulfa drugs, atabrin, synthetic rubber, anti-knock gasoline, hydrogenation of coal, nylon, and wetting agents in a brief but well-done manner.

The style of this book is succinct, but it leaves the impression that the vital force, having been eliminated from the theory of organic chemistry, also was eliminated from its teaching. An attempt to create interest

in the student has been made by the copious use of personal names in connection with reactions. When Perkin, Barbier, Grignard, Friedel-Craft were named as the originators of reactions, it was not expected that the textbooks of organic chemistry would become historical works to immortalize Tsischschenko, Tschugaeff, Hinsberg, Hell-Volhard-Zelinsky, Reformatsky, Knoevenagel, and so on, to the obscurement of many of the older masters.

This textbook is packed with information, somewhat difficult for beginners in organic chemistry but very useful to the more advanced student.

A HISTORY OF MAGIC AND EXPERIMENTAL SCIENCE. By Lynn Thorndike, Professor of History, Columbia University, Columbia University Press, Volumes V and VI: The Sixteenth Century. Volume V 695 pp.; Volume VI 766 pp. Price \$10.

Professor Thorndike's monumental history of magic and experimental science is completed by these two volumes which cover the general period from 1500 to 1630. They contain a wealth of integrated detail on an era, which for confusion of forces, interests, and ideas had no parallel. Professor Thorndike's work shows the extent of the classical reaction against the ideas and institutions of the Middle Ages, and how the appending of new facts to outworn systems resulted in the increase of confusion rather than enlightenment; how the quest was for the secrets rather than the laws of nature.

Religious cleavage and nationalist separation of this age are made clearer, and there is evidence which indicates that the natural and occult sciences were established as a common meeting ground where religious and political differences could be temporarily forgotten. The line of demarcation between magicians and witches were sharply drawn. Here is new information on persecution and intolerance, increase of free thinking and differences of opinion.

At the conclusion of the sixth volume, Professor Thorndike has most successfully blazed a way through the maze of Medieval and Renaissance magic to the threshold of modern science. The student of the humanities will be greatly aided and pleased

to discover the amount of incidental information these volumes contain about education, universities, libraries, and rare editions.



Mr. Walter J. Murphy, F.A.I.C., former editor and manager of *Chemical Industries*, has been appointed editor of *Industrial and Engineering Chemistry*, publication of the American Chemical Society. Robert L. Taylor, former advertising and public relations manager of Monsanto Chemical Company, St. Louis, Missouri, is the new editor of *Chemical Industries*.



Food Research Laboratories, Inc., 48-14 Thirty-third Street, Long Island City, New York, have issued a brochure entitled "Science at Your Service", which is offered without charge to interested readers who request it on their business letterheads.

Our Service Men Need BOOKS

Send ALL You Can

Give a Boost with a Book. Good books, in good condition, are wanted by the 1943 Victory Book Campaign for men in all branches of the service. Technical books published since 1935 are needed. Leave yours at the nearest collection center or public library.

CHEMISTS

Treat B. Johnson, past President of THE AMERICAN INSTITUTE OF CHEMISTS, will retire from the faculty of Yale University at the end of the current term on June thirtieth. Nationally known for his fundamental research in the field of pyrimidine chemistry, Dr. Johnson has served on the faculty of Yale University for the past forty-five years.



Nicholas Balyozian, F.A.I.C., has formed Federal Research Associates, 245 Stuart Street, Boston, Massachusetts, to do research on synthetic resins and polymers.



I. F. Laucks, Inc., Seattle, Washington, announce the development of a liquid insecticide to rid hardwood of the powder post beetle. This toxic solution is also water-repellent and is valuable to treat hardwood flooring in storage.



Carl E. Hartwig has resigned his position as senior research chemist with the American Chicle Company in order to conduct industrial research and development work for the Swan-Finch Oil Corporation.



Roy A. Shive, F.A.I.C., of the Calco Chemical Division of the American Cyanamid Company, has been appointed supervisor of the production and development of chemicals for synthetic rubber, under the National Rubber Administrator, Robert M. Jeffers.

Dr. John H. Yoe, F.A.I.C., professor of chemistry at the University of Virginia, recently toured the Southwest and West, under the auspices of the American Chemical Society, to report on research work on analytical chemistry at the University of Virginia. The Cobb Chemical Laboratory of this University was established to promote the discovery and development of new and more highly sensitive organic analytical reagents for detecting and determining chemical elements and compounds. Recently two new colorimetric methods have been developed, one for iron and the other for palladium. A gravimetric method of determination for the analysis of tungsten and tungsten steel has also been perfected. Dr. Yoe spoke in St. Louis, Kansas City, Manhattan, Wichita and Pittsburg in Kansas; Tulsa in Oklahoma; Amarillo, Dallas, College Station and Houston, in Texas, and New Orleans in Louisiana.



Dr. Ralph E. Lee, F.A.I.C., recently retired as director of the department of applied research of Standard Brands, Inc., New York, N. Y. He has been associated with this company since 1915, and has served as director of the department of applied research for twenty-two years. He was one of the first to encourage the enrichment of white bread and flour with vitamins to promote better nutrition.



Fortune, in its March issue, carries an article on "A New Source of Titanium", in which the story of the National Lead Company's mining of ilmenite in the Adirondacks is told.

Meeting Dates—1943

April 11-16—American Chemical Society. Spring Meeting. Detroit, Michigan.

April 16—Meeting of National Council of THE AMERICAN INSTITUTE OF CHEMISTS. 26th Floor, 2 Park Ave., New York, N. Y. 4 P. M.

April 16—Meeting of the New York Chapter of THE AMERICAN INSTITUTE OF CHEMISTS. 26th Floor, Number 2, Park Avenue, New York, N. Y. Student Medals to be presented. "Interviewing and Employing Prospective Chemical Employees."

April 20-24—Meeting. The American Chemical Society, Memphis, Tenn.

May 11-13—Meeting. The American Institute of Chemical Engineers, Boston, Mass.

May 15—Annual Meeting. THE AMERICAN INSTITUTE OF CHEMISTS. Edgewater Beach Hotel, Chicago, Illinois.

May 21—Meeting of the New York Chapter of THE AMERICAN INSTITUTE OF CHEMISTS. The Chemists' Club, 52 East 41st Street, New York, N. Y. "Ancient Fabrics and Their Application in Modern Design." M. D. C. Crawford, of Fairchild Publications, New York, N. Y.

Sept. 6-10—American Chemical Society. 106th Meeting. Minneapolis, Minnesota.

Dec. 28-30—American Chemical Society. Organic Chemistry Symposium. Boston, Mass. Tenth National Symposium.

From our Readers

Gentlemen:

I wonder if the following has ever been brought to the attention of the Institute. It is the manner in which the chemist and the laboratory is portrayed to the public in motion pictures and on radio programs.

The chemist is depicted as a creature that is certainly by no means edifying. The general impression left in the mind of the average person is that he is decidedly a devilish sort of creature embodied with the mysticism of the middle ages, and his chief purpose in life is to devise new means of horror.

Perhaps, during these precarious times it should go unnoticed but I think some action should be taken to correct this condition, so that some day some one of us may not be burned at the stake.

Very truly yours,
Thomas J. Walsh.



"Certainly the standards and principles upon which the Institute is organized set a goal for any chemist worthy of the name. Your journal, though small, has netted me considerable information no elsewhere available. This periodical serves as an introduction too, to the many members who would otherwise remain but familiar names devoid of personality."



"I am very glad to support an organization whose qualifications for membership are high and which attempts to maintain high standards for the profession of chemistry."

NEW BOOKS**Natural & Synthetic
High Polymers**

KURT H. MEYER

1942. 690 pages, 180 ill. \$11.00

For the first time an attempt has been made to give a systematic account of the entire field of natural and synthetic, inorganic and organic high polymers.

Volumetric Analysis, Vol. I

DR. I. KOLTHOFF, DR. V. STENGER

1942. 325 pages, 31 ill. \$4.50

The book retains the general character of the first English edition although some condensation, and shifting in the order of presentation have been necessary to make room for considerable new material.

Organic Chemistry

PROF. PAUL KARRER

1938. 900 pages, ill. \$11.00

The aim is to provide students with a textbook of organic chemistry of medium size, which would give them a survey of the ever-increasing body of facts.

Fundamentals of Immunology

DR. W. C. BOYD

1943. 425 pages, 45 ill. \$5.50

An introduction to immunology for medical students, chemists, biologists, and others interested in an understanding of the basic principles of the science, written from the standpoint of a chemist.

War Gases

DR. M. B. JACOBS

1942. 200 pages, 8 ill. \$3.00

The book presents the subject to that it will be useful to the gas identification officer, war gas chemist, decontamination officer, health officer, air raid warden, to all persons dealing with gas defense.

**Chemistry & Physiology
of the Vitamins**

DR. H. R. ROSENBERG

1942. 694 pages, 25 ill. \$12.00

The first comprehensive treatment in the English language of the chemistry and physiology of all the vitamins.

Advances in Colloid ScienceEdited by DR. E. O. KRAEMER, PROF.
FLOYD E. BARTELL, DR. S. KISTLER

1942. 446 pages, 161 ill. \$5.50

Ten outstanding colloid chemists report in an authoritative and personal way on the progress in their fields.

**Chromatographic Adsorption
Analysis**

DR. H. R. STRAIN

1942. 232 pages, 37 ill. \$3.75

The book features a description of a unique columnar adsorption method for the detection, isolation, and purification of numerous compounds not preparable by other methods.

Copies may be obtained from

THE CHEMIST

233 Broadway

New York, N. Y.

NEW BOOKS
INDUSTRIAL RESEARCH

F. RUSSELL BICHOWSKY

1942

\$2.50

The purpose of this book is to display the social importance of research and to outline those general principles of management and organization which have proven successful in the laboratory. This book, therefore, may be considered as a manual for the research director and for the business executive, real or potential. But it is more than that, as it presents in a concrete form what may be thought of as a philosophy or theory of research in its social aspects.

CELLULOSE CHEMISTRY

MARK PLUNGUIAN, Ph.D.

1943

\$2.25

This book will serve the practising cellulose chemist who wishes to review the latest developments in this field. Interpretations of reactions were made on the basis of the modern conceptions of the micellar structure of cellulose. This book will be welcomed by the chemist keen to orientate himself in an important, interesting and rapidly developing branch of chemistry.

ADHESIVES

FELIX BRAUDE, Ph.D.

1943

\$3.00

This book was written primarily for the practical man who is interested in adhesives either as producer, consumer or salesman. It should also be of value to anyone requiring a concise, bird's-eye view of the subject. No chemical or technical training is required for the full understanding of this volume, as the subject is presented from the practical point of view with a minimum of theoretical discussion.

**ULTRA-VIOLET LIGHT
and Its Applications**

H. C. DAKE and JACK DE MENT

1942

\$3.25

This book presents the most important of the innumerable practical applications which have been found for ultra-violet light and fluorescence in the industries, sciences, and arts. Only the uses believed to hold the widest practical applications, and possibilities for future development have been included.

THE BLAST FURNACE**Its Raw Materials, Products, By-Products
and Their Chemical Analysis**

ROY P. HUDSON

1942

\$3.75

This volume will be of interest to practical blast-furnace men, to fuel preparation engineers and technologists, and to metallurgical chemists. It will be used as a reference work, by students of metallurgy and metallurgical analysis.

**CHEMICAL AND TECHNICAL
DICTIONARY**

A. W. MAYER

1942

\$8.00

German-English-French-Russian

Students in scientific fields and also those interested in languages will find this book an excellent aid in their work. It is also of great value for those who desire to keep up with current chemical developments abroad as recorded in foreign periodicals.

ORGANIC CHEMISTRY SIMPLIFIED

RUDOLPH MACY

1943

\$3.75

This is primarily a text of organic chemistry and gives a simple and a clear outline of this vast field. It will be useful not only to students who want to acquire a basic training in organic chemistry, but also to those who are engaged in work of a chemical nature and would like to study the principles of reactions and nature of compounds they deal with.

*Copies may be obtained from***THE CHEMIST**

233 Broadway

New York, N. Y.

THE NATIONAL PAINT DICTIONARY

Second Edition Now Ready

By

JEFFREY R. STEWART, F.A.I.C.

Editor and publisher of the National Paint Bulletin

*You need this new, completely revised handbook
in your*

Laboratory

Office

Library

Home

It is the most complete work of its kind now available, and is condensed into 224 pages with approximately 200 illustrations and charts.

It includes definitions of trade names of raw materials used in the Paint and Allied Industries.

It describes all of the important testing devices and apparatus used in the laboratory, together with illustrations.

It contains charts, tables, useful information and miscellaneous data. It is strictly technical, thoroughly authentic and completely unbiased.

Since this is a limited edition, it is important that you send your orders in now. The book is bound in durable green Fabrikoid, trimmed with red and gold stampings. . . Price \$7.50.

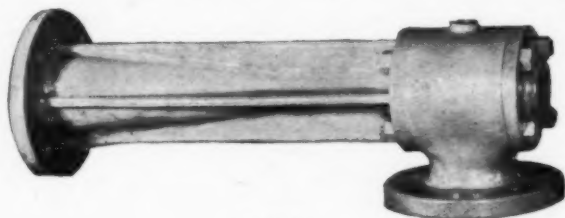
Copies may be obtained from

THE CHEMIST

233 Broadway

New York, N. Y.

STEAM JET EVACTORS



Aiding

NATIONAL DEFENSE

Numerous Croll-Reynolds Evactors are working over-time maintaining high vacuum in plants making explosives, synthetic rubber, airplane lubricants and a long list of other ordnance materials. They are maintaining high vacuum on engines and turbines of dozens of American ships sailing the seven seas.

While the large and special units require up to three months or more for fabrication the smaller ones are sometimes made in two weeks, or less, when the demand is urgent. These include single and multi-stage units for vacuum up to a small fraction of 1mm. absolute, also small condensers and vacuum chilling equipment.

A recent development is a vacuum-cooled condenser for maintaining condensing temperatures down to 34° F. Inquiries will be handled as promptly as possible under the circumstances.

CROLL-REYNOLDS CO.

ESTABLISHED 1917

17 JOHN STREET

NEW YORK, N. Y.

